



Delaware Broadband Fund Grant Phase II Applicant Guide November 2016

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1. Background and Purpose of Project

- 1.1. Delaware repeatedly ranks among the top few states on measures of broadband speed and connectivity as reported by the popular press. For example, Akamai's State of the Internet Q4 2015 report ranked Delaware as the top state, excluding the District of Columbia in terms of average connection speed and average peak connection speed. While these ranking systems are imperfect, and likely do not reflect the standing of Delaware's rural southern reaches, they do illustrate that Delaware is relatively well covered by infrastructure allowing for high speed internet connections.
- 1.2. Based on the FCC's redefinition of broadband speeds of 25Mbps/3Mbps, and the 2010 U.S. Census, there are more than 33,000 Delawareans or 3.6% of Delaware's population that are living in census blocks that are not served by wired broadband speeds that meet or exceed the established threshold. Recent scholarly research on the impacts of broadband show that increases in rural broadband adoption rates are associated with household income growth and reductions in unemployment levels, while a lower level of adoption is associated with reduced levels of employment and fewer businesses.¹ Therefore, increasing broadband adoption rates may make a larger impact on economics and individual households than wired infrastructure improvements.
- 1.3. Regrettably, Delaware does not fare as well on ranking of broadband adoption as it does on assessments of availability. New Castle County ranks 229th of 817 counties ranked, with 64% of households subscribing to internet services using wired broadband (i.e., cable, DSL, or fiber).² Kent County and Sussex County rank 249th and 428th with only 63.3% and 57.8% respectively, subscribing to wired broadband. In the number one ranked county of Morris County, New Jersey, 79.4% of households subscribe to internet services using wired broadband.
- 1.4. For rural households and businesses in Delaware without access to high-speed wired broadband connections Fixed Wireless solutions can afford a path forward that enables the benefits of broadband adoption without the unwarranted private and public expenditures. As wireless broadband solutions offer increasing degrees of speed and reliability, they afford rural households and businesses opportunities to leapfrog over previous technological solutions just as some developing countries skipped wireline telephones in favor of mobile technology. The emphasis on fixed wireless broadband solutions in the remaining award phases of the Delaware Broadband Grant Fund ("Fund") will allow Delaware residents and businesses to enjoy the benefits of broadband connections, while advancing public purposes in areas of economic development, public education, and public health.³

¹ Whitacre, B., Gallardo, R., & Strover, S. (2014) Broadband's contribution to economic growth in rural area: Moving towards a causal relationship. *Telecommunications Policy*, 38(11), 1011-1023.

² US Census Bureau, 2014 American Community Survey 1-Year Estimates, http://factfinder.census.gov/bkmk/table/1.0/en/ACS/14_1YR/B28002/0100000US.05000.003.

³ Stenberg, P., Morehart, M., Vogel, S., Cromartie, J., Breneman, V., & Brown, D. (2009). Broadband Internet's value for rural America. Washington, DC: US Department of Agriculture. *Economic Research Service, Economic Research Report*(78).

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- 1.5. For Award Phase II of the Delaware Broadband Grant Fund, the intent is to award funds to incentivize the implementation of one or more pilot projects in two categories: Fixed Wireless broadband and Municipal Wireless broadband.
- 1.6. Fixed wireless broadband networks will offer subscription-based broadband services to households and businesses in geographic areas identified as Unserved as determined by the study on wired broadband availability versus the adoption rates.
- 1.7. Municipal wireless networks will offer services such as, subscription services for downtown businesses, households, visitors, and public Wi-Fi in designated areas in, at a minimum, the downtown portions of incorporated municipalities.
- 1.8. In each case, services shall be provided to Pilot Participants **at no cost for a minimum 90-day trial period** as a condition of accepting Broadband Grant Fund monies. The limited, pilot nature of these projects will allow for evaluation of the success of the projects and the assessment of the viability of future growth through more extensive investments. The success of the pilot projects will achieve important public purposes by demonstrating the ability of future projects to provide for economic development and other related outcomes in Delaware.

2. Targeted Investments

- 2.1. [Figure A-1, Advertised Residential Download Speeds for Wired Connections by Census Block](#), displays census block-level details on maximum download speeds advertised to households by providers of wired broadband. While availability of broadband is not uniform within blocks, this level of detail represents the best available information on broadband infrastructure marketed to consumers. Based on the 2010 U.S. Census and data from the June 2014 National Broadband Map, more than 96% of Delaware residents live in a block that is served by a wired broadband provider offering residential download speeds in excess of 100 Mbps—some four times the threshold the FCC defined as providing consumers with “advanced telecommunications capability.”⁴
- 2.2. Measured in terms of reported availability of wired infrastructure, unserved areas with no available broadband service are becoming exceedingly rare in Delaware. However, this impressive coverage masks significant regional differences and a small but significant population of Delaware residents that cannot access broadband service that meets or exceeds new FCC standards. On a school district basis, more than a quarter of the population in the Woodbridge district cannot access more than 10 Mbps of wired broadband download speeds.
- 2.3. [Table 1, Percent of Population without Access to Wired Broadband Services with Download Speeds Greater than 10 Mbps, by School District](#), lists the degree of broadband availability in all school districts, with Laurel, Lake Forest, and Delmar offering the least access among the others. Similarly, 17.7% of workers in the Woodbridge geography work in census blocks without access to residential broadband download speeds that meet or exceed the 10Mbps standard.

⁴ Federal Communications Commission, “2015 Broadband Progress Report And Notice Of Inquiry On Immediate Action To Accelerate Deployment,” https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-10A1.pdf

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Indian River (20.8%), Laurel (14.0%), and Colonial (10.0%) are the other districts ranking the least accessible according to this metric.⁵

- 2.4. [Figure A-2, Percent of Households Adopting at least 3Mbps/768kps Connection in their Home, by Census Tract](#), uses FCC Form 477 data to report Census tract-level household adoption rates of broadband with speeds exceeding 3 Mbps/768 kbps. At the end of 2014, adoption rates of less than 40% were reported for a tract straddling Lake Forest and Woodbridge school districts, with adoption rates of no more than 60% present across a significant portion of Sussex County's land area. The chief obstacle to increased adoption is financial concern about the cost of broadband service, with older and less educated populations tending to be less likely to adopt.⁶
- 2.5. [As shown in Figure A-3, Percentage of Low Income Students by Delaware School District](#), school districts with high proportions of low income students tend to be located in regions also associated with low broadband adoption rates. With several studies pointing to the value broadband access and internet use at home can play for student achievement—and particularly the achievement of low income students—such a correlation is concerning and worth addressing for Delaware's future.⁷
- 2.6. This solicitation intends to consider and fund one or more projects enhancing broadband services to Unserved areas, individuals, or businesses using either a Fixed Wireless or Municipal Wireless project model. Key Terms are defined in Appendix B: Definitions.
- 2.7. [Appendix A: Reference Maps](#), show target areas in which applications for assistance in building Fixed Wireless networks are encouraged. The depicted Caesar Rodney, Capital, Delmar, Lake Forest, Laurel, Seaford, and Woodbridge school district areas contain both low income, low broadband availability, and low adoption areas which are the focus of this award phase. Applications for Fixed Wireless networks will be considered outside these areas, but coverage areas should exemplify similar low income, availability, and adoption characteristics.
- 2.8. To provide a starting point for efforts to define a target market for a proposed project, [Table 2, Population without Access to Wired Broadband Services with Download Speeds Greater than 25 Mbps, by Targeted School District](#), lists the Unserved population by targeted school district using National Broadband Map, June 2014 data.

3. General Information

- 3.1. Phase II of the Delaware Broadband Grant Fund is for assessment purposes only.

⁵ University of Delaware Institute for Public Administration analysis of National Broadband Map, National Telecommunications & Information Administration, State Broadband Initiative, June 2014 and US Census LEHD Origin-Destination Employment Statistics, 2014.

⁶ "Home Broadband 2015" by John Horrigan and Maeve Duggan, Pew Research Center, <http://www.pewinternet.org/files/2015/12/Broadband-adoption-full.pdf>.

⁷ "The Impact of Broadband on Education," https://www.uschamber.com/sites/default/files/legacy/about/US_Chamber_Paper_on_Broadband_and_Education.pdf.

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- 3.2. Applicants are expected to propose a complete 90 day turnkey solution (installation, operation and ongoing support) that will provide Pilot Participants with broadband capabilities in excess of the 25Mbps/3Mbps threshold defined by the FCC.
- 3.3. Participation in the Pilot Project Application Process does not guarantee implementation.
- 3.4. Phase III of the Delaware Broadband Grand Fund has not yet been planned.
- 3.5. Application submissions are not a commitment for funds, nor does it obligate the State of Delaware or any State agency to lend any form of financial assistance.
- 3.6. Applicants may NOT contact the pilot location partners directly without prior approval from the Department of Technology and Information (DTI).
- 3.7. Awarded vendors will be granted permission to utilize existing electrical service.
- 3.8. Awarded vendors will be required to acquire a dedicated Internet backhaul service.
- 3.9. Each pilot location has access to at least one Internet provider service.

4. Pilot Project Specific Requirements Related to Pilot Participants

- 4.1. Select Pilot Participants to test the solutions and provide feedback to the Department of Technology and Information.
- 4.2. Provide the name, address and contact email of each participant to the Department of Technology and Information within 45 days following the start date of each Pilot Project.
- 4.3. Require Pilot Participants to complete a survey from the Department of Technology and Information within 75 days following the start date of Pilot Project.
- 4.4. Notify Pilot Participants of survey requirement and include in any participation agreements between the vendor and the Participant that a survey is required.
- 4.5. Be responsible for any and all required participation and hardware agreements between the awarded vendor and the Participant for the 90 day Pilot Project.

5. Application Procedures

- 5.1. Step One – Applicants must attend mandatory site tours for each applicable location prior to submitting an application. **Completed Site Tour Request forms must be submitted to the designated contact listed prior to the deadline, as indicated on the Mandatory Site Tour Request Form.**
- 5.2. Step Two – Applicants must complete the PDF form Application, and return the original form along with any required and supplementary exhibits and six (6) copies of the entire Application, including Exhibits, to the Procurement Officer at: Department of Technology and Information, Attention: Procurement Officer, 801 Silver Lake Boulevard, Dover, DE 19904 by **no later than 3:00 PM (EST) on Thursday, January 12, 2017.**

6. Summary

In summary, compelling Applications for Delaware Broadband Fund assistance will clearly demonstrate the following.

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- 6.1. Capability of the Applicant to implement a Project similar in character and scale to that proposed;
- 6.2. Viability of the Project design based on reference to factors such as the technical specifications of equipment used and examples of previously completed and operational projects, including the reliability of the solution for providing for household, business, and municipal needs;
- 6.3. Number and characteristics of customers (i.e., municipalities, households or businesses) committed to take part in a pilot, with an emphasis on serving areas that currently lack broadband service of sufficient speed.
- 6.4. For household service, the degree to which low income, school-aged and elderly residents are committed and recruited will improve the merits of the proposed project.
- 6.5. Degree to which the project will provide customers with broadband capabilities in excess of the 25 Mbps/3Mbps threshold defined by the FCC;
- 6.6. Viability of the strategy proposed for recruiting additional Pilot Participants, as well as customers outside of the pilot period; and
- 6.7. Economic sustainability of the pilot project beyond the pilot period, including the affordability and value of the service to customers outside the pilot period.

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7. Appendix A: Tables

Table 1:

7.1. Percent of Population without Access to Wired Broadband Services with Download Speeds Greater than 10 Mbps, by School District, June 2014.

Woodbridge	Laurel	Lake Forest	DelMar	Seaford
27.3	14.3	11.8	7.3	5.5
Indian River	Capital	Milford	Christina	Caesar Rodney
3.6	3.0	2.7	2.5	2.2
Smyrna	Colonial	Red Clay	Cape Henlopen	Brandywine
2.0	1.9	1.8	1.6	1.3
Appoquinimink				
0.0				

Source: University of Delaware Institute for Public Administration analysis of National Broadband Map, National Telecommunications & Information Administration, State Broadband Initiative, June 2014 and US Census 2010.

Table 2:

7.2. Population without Access to Wired Broadband Services with Download Speeds Greater than 25 Mbps, by Targeted School District, June 2014.

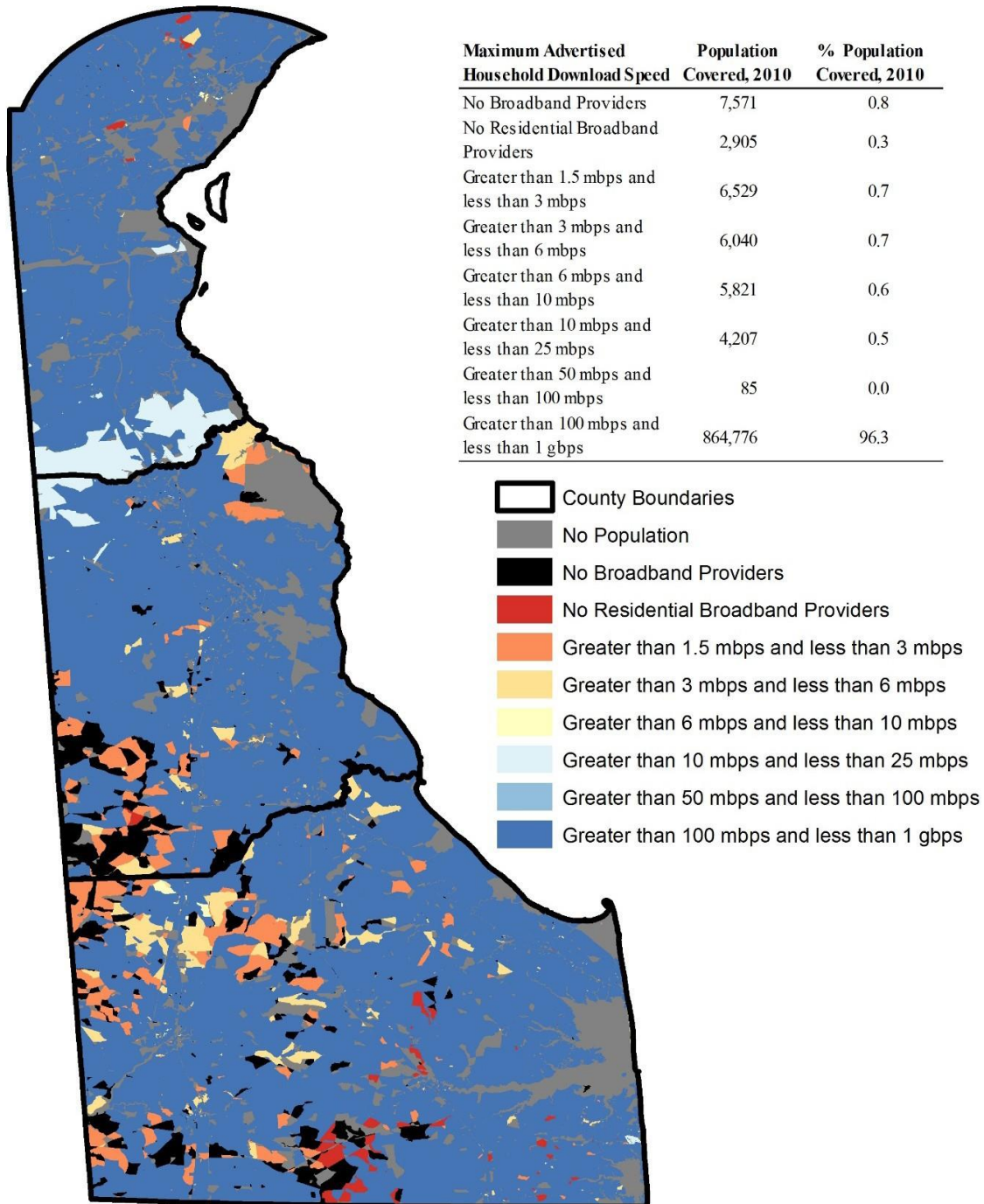
Maximum Advertised Residential Download Speeds	Caesar Rodney	Capital	Delmar	Lake Forest	Laurel	Seaford	Woodbridge
No Broadband Providers	552	1,016	255	1,455	1,003	291	1,102
No Residential Broadband Providers	0	8	0	29	135	0	3
Greater than 1.5 mbps and less than 3 mbps	261	80	199	887	691	485	1,990
Greater than 3 mbps and less than 6 mbps	159	218	4	459	415	300	1,018
Greater than 6 mbps and less than 10 mbps	0	213	0	59	0	225	85
Greater than 10 mbps and less than 25 mbps	0	3	0	0	0	0	0

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8. Appendix B: Reference Maps

Figure A.1:

Advertised Residential Download Speeds for Wired Connections by Census Block, June 2014.

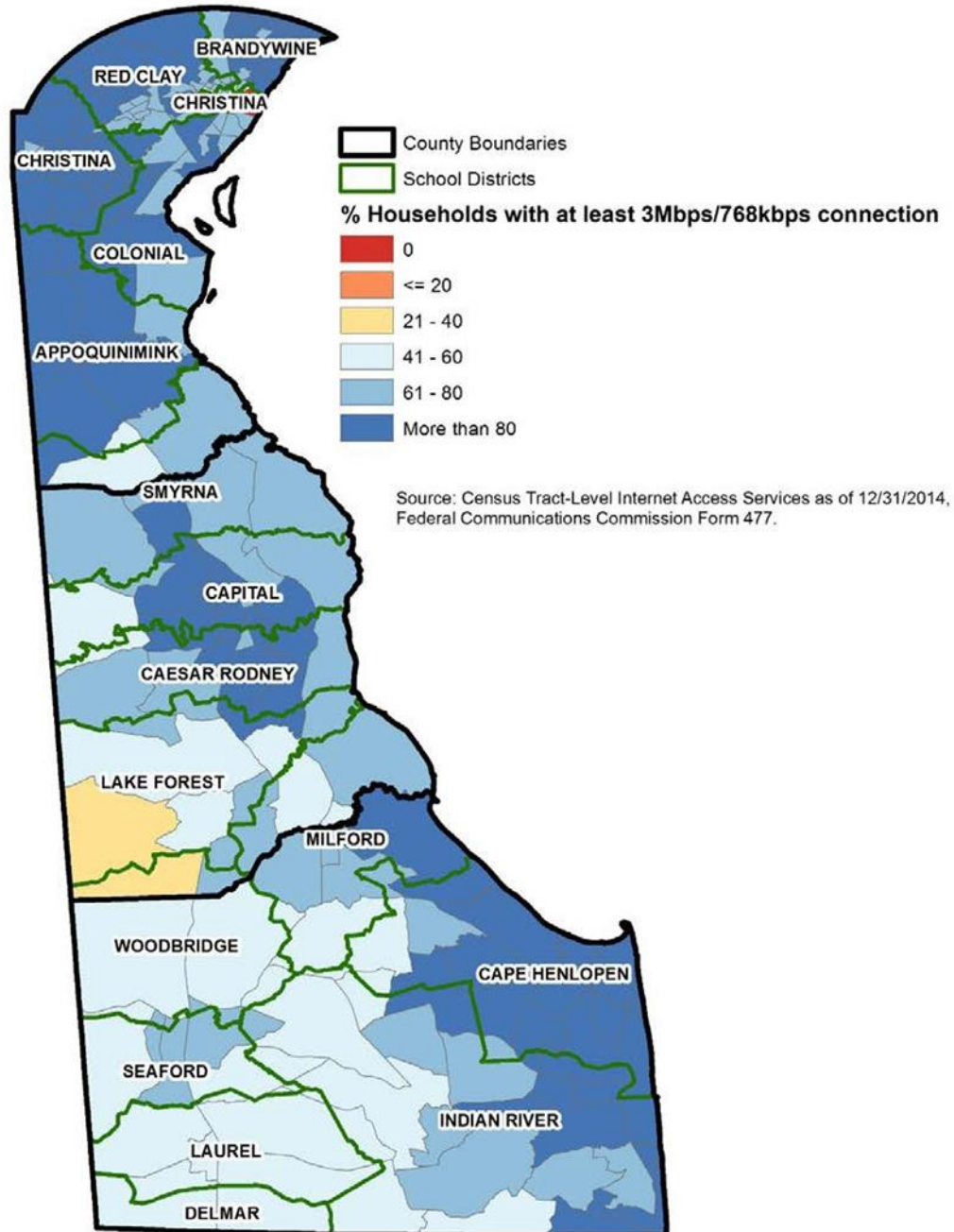


Sources: National Broadband Map, National Telecommunications & Information Administration, State Broadband Initiative, June 2014; US Decennial Census, 2010.

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Figure A.2:

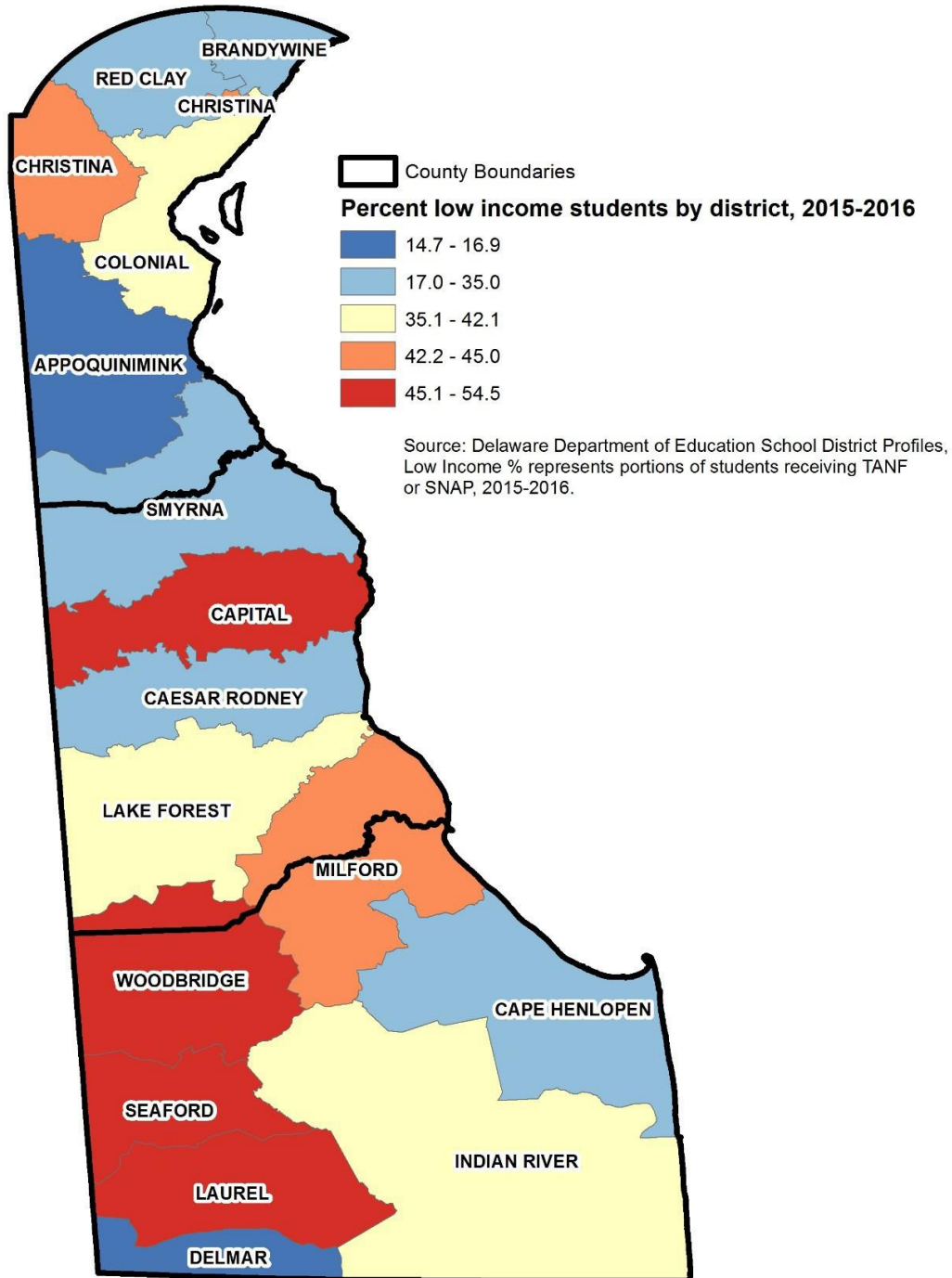
Percent of Households Adopting at least 3Mbps/768kps Connection in their Home, by Census Tract, 12/31/2014.



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Figure A.3:

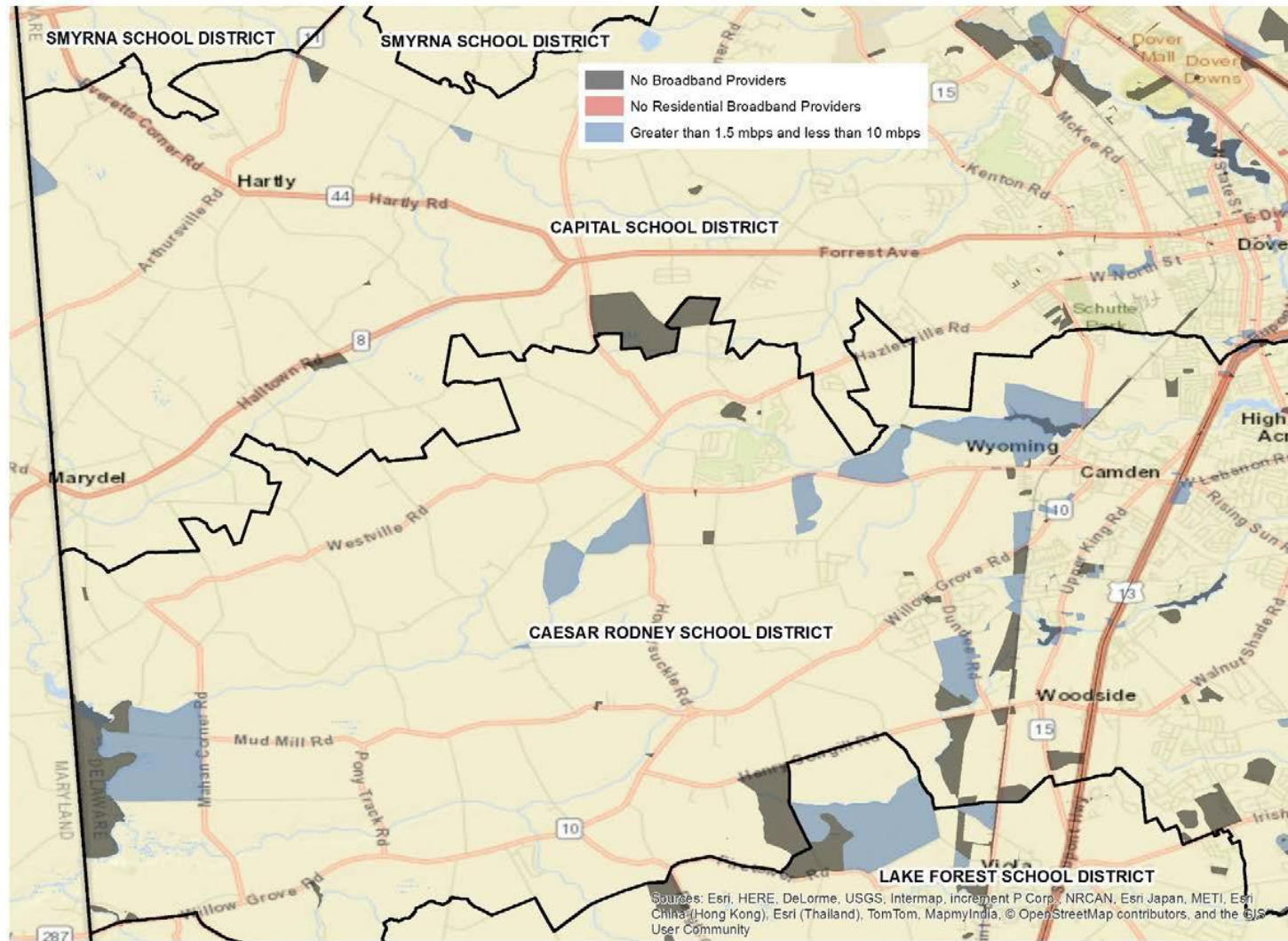
Percentage of Low Income Students by Delaware School District, 2015 - 2016.



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Figure A.4:

Percentage of Low Income Students by Delaware School District, 2015 - 2016.

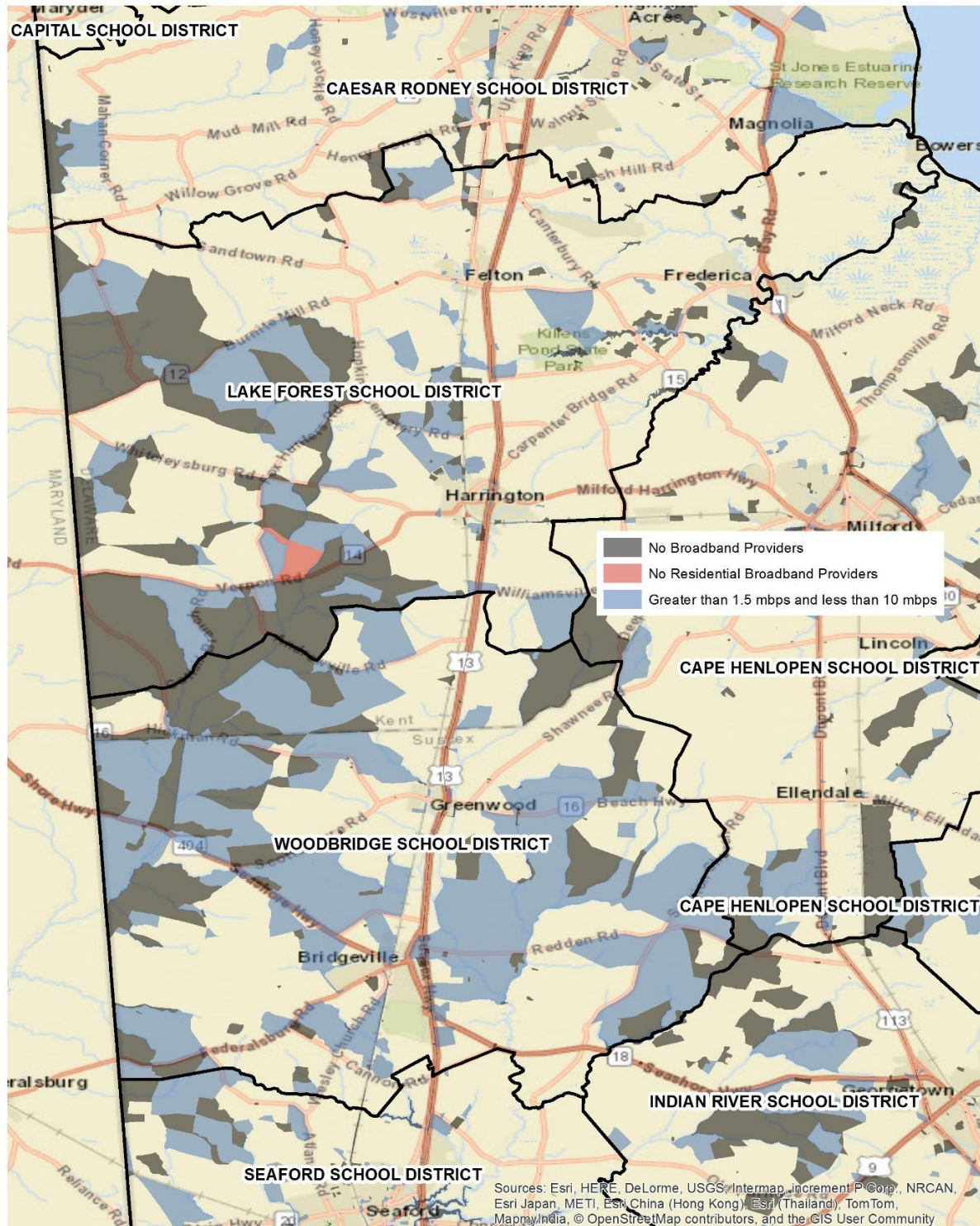


Broadband Data Sources: National Broadband Map, National Telecommunications & Information Administration, State Broadband Initiative, June 2014.

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Figure A.5.

Broadband Availability in Target Area around Lake Forest and Woodbridge School Districts, June 2014.

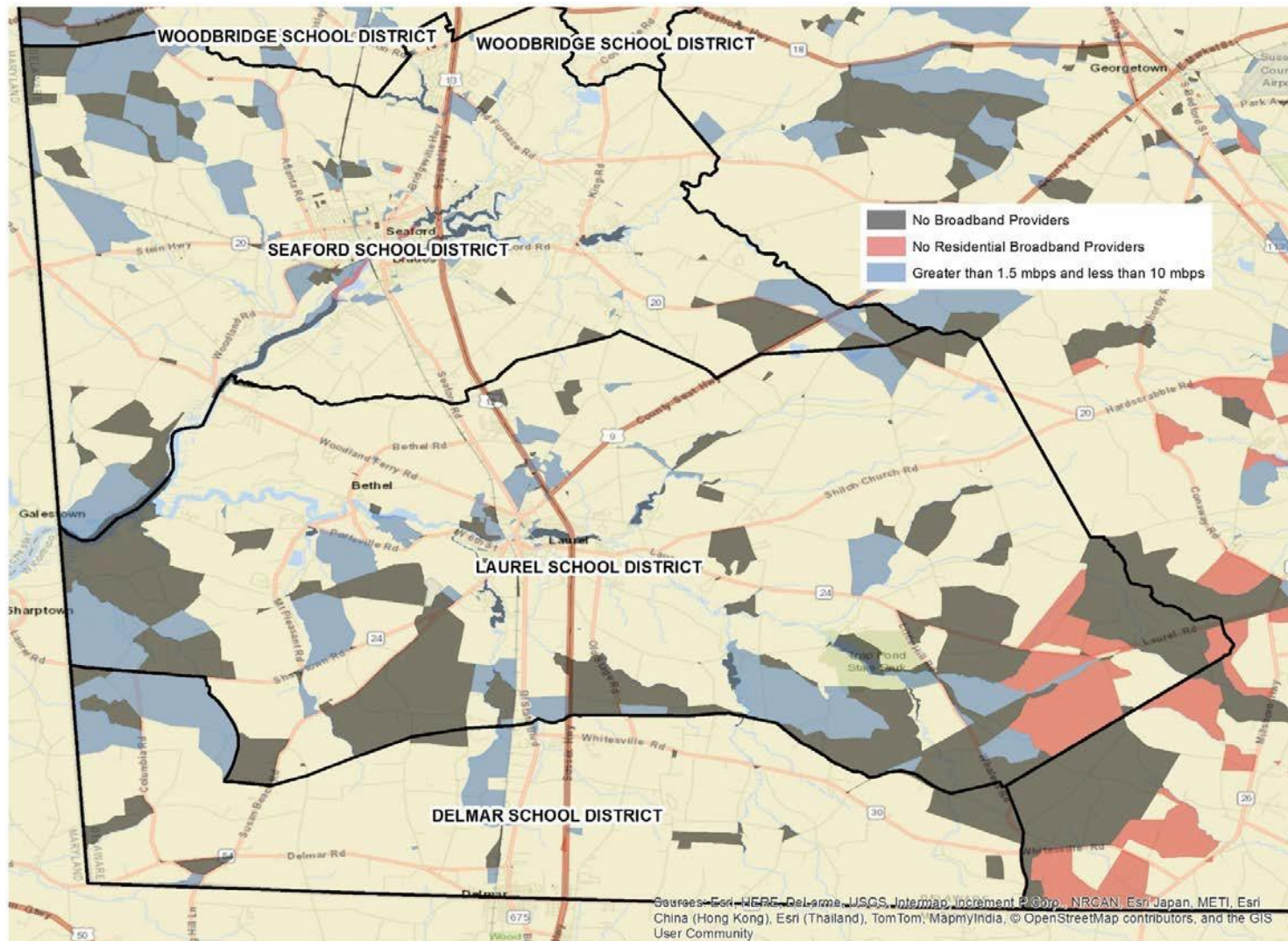


Broadband Data Sources: National Broadband Map, National Telecommunications & Information Administration, State Broadband Initiative, June 2014.

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Figure A.6.

Broadband Availability in Target Area around Seaford, Laurel, and Delmar School Districts, June 2014.

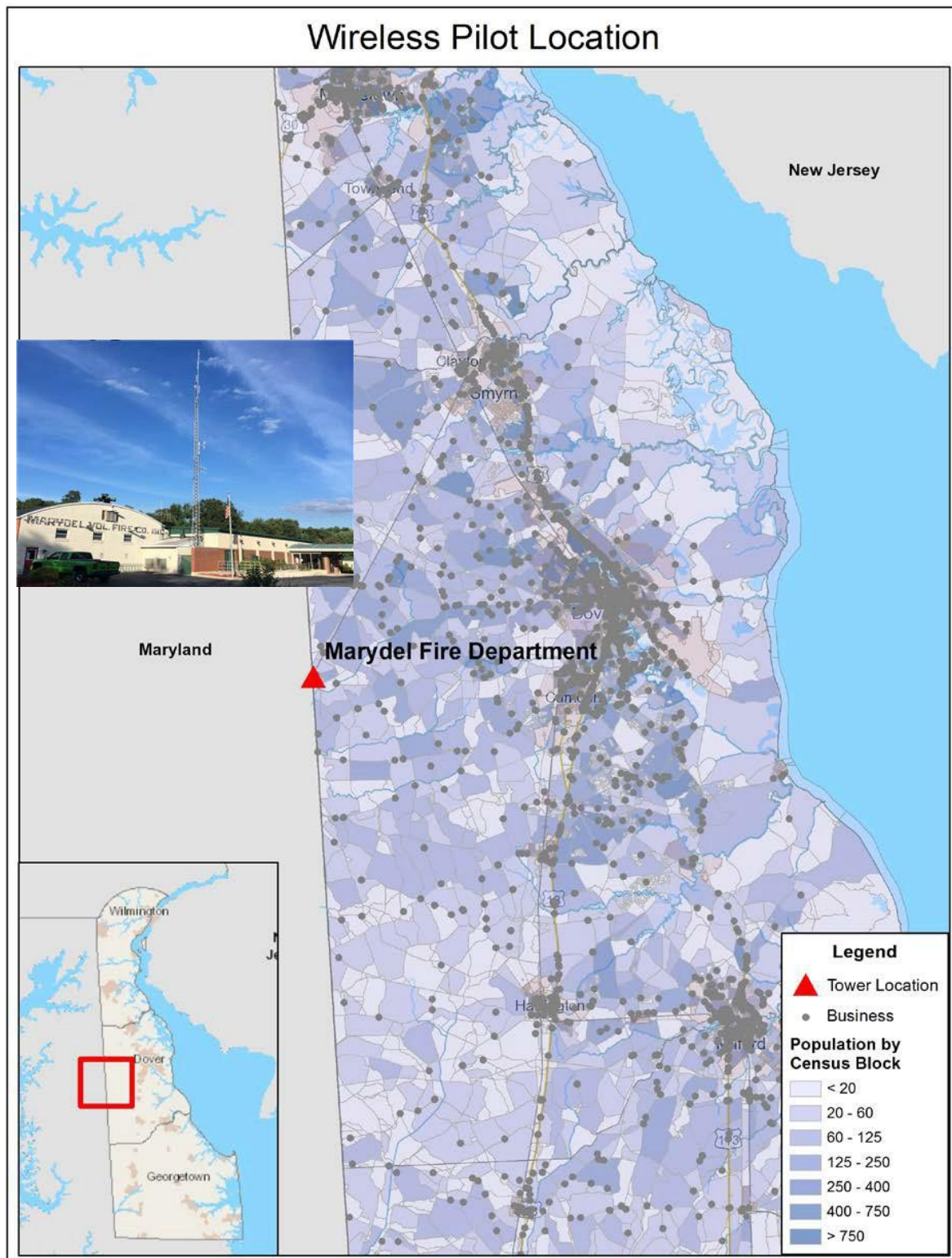


Broadband Data Sources: National Broadband Map, National Telecommunications & Information Administration, State Broadband Initiative, June 2014.

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Figure A.7.

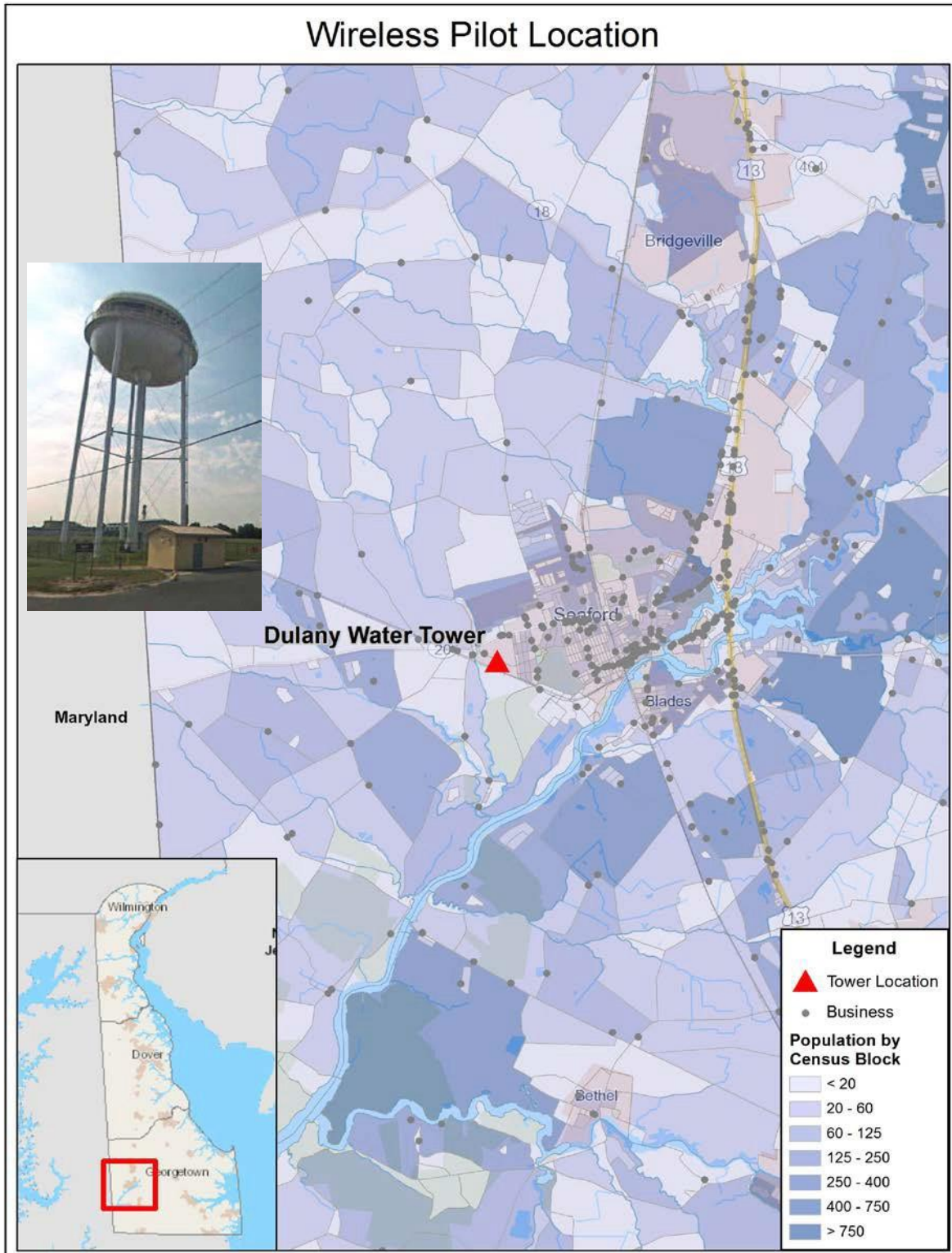
Fixed Wireless Pilot Location – Marydel Fire Department.



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Figure A.8.

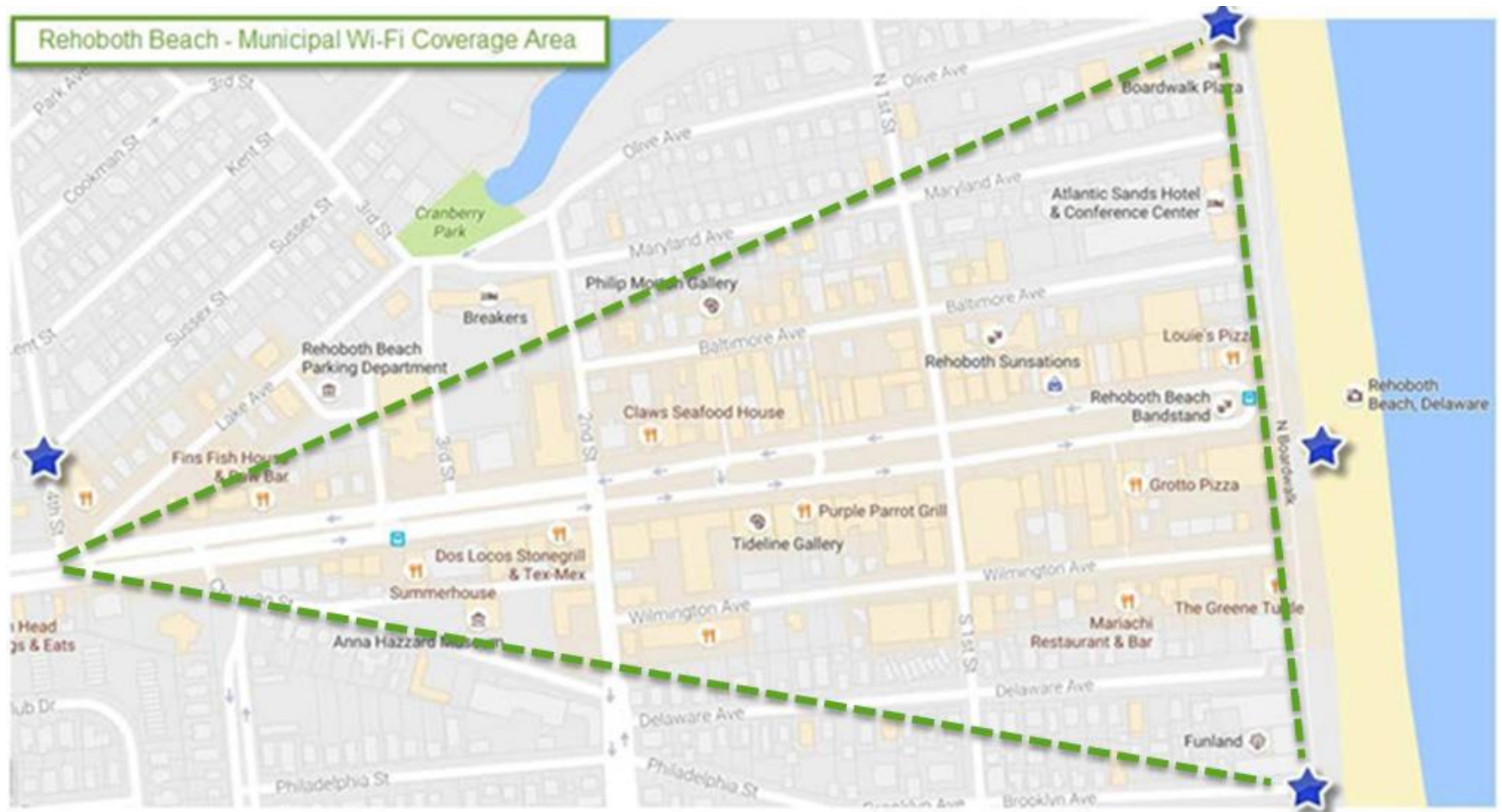
Fixed Wireless Pilot Location – Seaford, Dulany Street Water Tower



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Figure A.9.

Fixed Wireless Pilot Location – Seaford, Dulaney Street Water Tower



9. Appendix C: Definitions

- 9.1. **Applicant:** Any person, including individuals, firms, partnerships, trusts, public or private corporations, or other legal entities, for which a Project is undertaken or proposed to be undertaken.
- 9.2. **Application:** An Application made to the Committee on such form or forms, together with all relevant attachments, as the Committee may, in its sole discretion, require in connection with administration of the Fund.
- 9.3. **Committee:** The Delaware Broadband Fund Committee is comprised of the DTI's Engineering Team Leader, DelDOT's Traffic Management Center Manager, DEDO's Director of Infrastructure & Inter-Governmental Relations, DTI's Controller and OMB's Deputy Director.
- 9.4. **Fixed Wireless:** A wireless broadband service offered on a subscription basis, which connects a home or business to the Internet using a radio link between the customer's fixed location and the service provider's facility.
- 9.5. **Mandatory Site Tour Request Form:** A required form for Applicants to indicate a willingness to attend the required mandatory site visit for any or all locations for which the Vendor intends to provide service.
- 9.6. **Municipal Wireless:** A wireless network covering an entire incorporated municipality or a portion of a municipality—typically at least the downtown area—and serving Applications such as connectivity for municipal or public safety operations, subscription internet services for downtown businesses, residents, and visitors, and public Wi-F in designated areas.
- 9.7. **Participant:** A person or persons in targeted areas which will include residents, schools, and businesses.
- 9.8. **Project:** The specific intended use of the proceeds from the Fund.
- 9.9. **Unserved:** Means any of the following:
 - 9.9.1. A geography, such as a Census block, not served by at least one wireline residential broadband provider advertising speeds equal to or exceeding 25 Mbps downstream
 - 9.9.2. A household, business, or collection of households or businesses that does not, at their premise, currently subscribe to or use fixed broadband internet services advertising speeds equal to or exceeding 25 Mbps downstream
 - 9.9.3. A municipality not currently served by a Municipal Wireless network